

Maxillo-facial radiology case 112

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This fourteen year old male patient presented with a fast growing painful mass at the left angle of the mandible, showing mucosal ulceration and a loose 37. He also experienced a "pins and needles" sensation on the same side. Clinical examination revealed a hard bony swelling and an ulcerative lesion in the molar region (upper clinical pictures and cropped pantomograph). The lower pictures are from another patient with a similar condition. What are the most important radiological features and what is your diagnosis?



INTERPRETATION

The upper cropped pantomograph shows bone destruction in the left mandibular ramus molar region and an early periosteal reaction. A histological diagnosis of an osteosarcoma was made.

The cardinal radiologic features of osteosarcoma are: single, ragged, or ill-defined radiolucency, destruction of bone with indefinite margins, or sclerosis with increased radiopacity or a mixed appearance. Some osteosarcomas present a "sunray" effect caused by radiating mineralised tumour spicules (lower left axial CT scan of the mandible of a 17-year-old female). Coronal MRI of the same patient shows loss of continuity of the buccal plate of the mandible on the right side (red arrow). The tumour also displays intermediate signal intensity.

Approximately 4-7 % of all osteosarcomas arise in the jaws and there is no sex predominance. The mandible is ap-

parently affected more often than the maxilla. The two outstanding symptoms which lead the patients to their dental practitioner or physician are swelling and, or pain. Radiographic evidence of a symmetrically widened periodontal ligament space should raise the level of suspicion. The lower right chest radiograph reveals a small mass in the left lung indicative of metastasis (yellow arrow). When the tumour spreads to other organs of the body the lung is a common site of involvement. A tissue biopsy and histopathological examination will reveal osteoid tissue very similar of that of the tumour at the site of origin. Therapeutically, the most effective single measure appears to be radical resection. Mandibular osteosarcomas have a better prognosis than maxillary osteosarcomas.

References

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